**IN THE CLAIMS:**

Please amend the claims as follows.

Claim 1 (Currently Amended): A system for measuring a heart rate, comprising:

a database in which at least one set of electrocardiogram waveform data of a living body related to each person to be examined are stored in advance, the electrocardiogram waveform data serving as reference waveform data;

an acquisition unit for acquiring a heartbeat signal generated in the living body;

a production unit for producing electrocardiogram waveform data of the living body based on the acquired heartbeat signal;

a search unit for searching the database on the basis of produced waveform data served by the produced electrocardiogram waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired;

a cross-correlation processing unit for performing cross-correlation processing between the produced waveform data of which lower-frequency components have been removed and the specified reference waveform data; and

a calculation unit for calculating an extremal value every period of time from data subjected to $R_{xy}$ in the cross-correlation processing and the heart rate based on the extremal value calculated every period of time,

wherein the cross-correlation processing unit calculates $R_{xy}$ defined by the equation (1) every time the delay time $\tau$ is shifted by a predetermined amount:

$$R_{xy}(t) = \lim_{T \to 0} \frac{1}{T} \int_{-\frac{T}{2}}^{\frac{T}{2}} x(t)y(t+\tau)dt \quad \ldots (1),$$

where x denotes the produced electrocardiogram waveform data of which lower-frequency components have been removed, $\gamma$ denotes the specified reference waveform data template data, $\tau$ denotes a delay time and provides a value of the $R_{xy}$ to the calculation unit.

Claim 2 (Original): The system according to claim 1, wherein the search unit comprises:

a similarity calculating unit for calculating a similarity between the produced waveform data produced by the production unit and each set of the reference waveform data stored in the database; and

a waveform data specifying unit for specifying, based on the calculated similarity, the reference waveform data of the living body from which the heartbeat signal has been acquired.

Claim 3 (Original): The system according to claim 2, wherein the similarity calculating unit comprises:

a waveform cutting-out element for cutting out, every predetermined period of time, waveform data from the produced waveform data produced by the production unit;

an average calculating element for calculating a single average waveform data based on the waveform data cut out every period of time; and

a data similarity calculating element for calculating the similarity between the average waveform data and each set of the reference waveform data stored in the database,

wherein the waveform data specifying unit is configured to specify, based on the calculated similarity, the reference waveform data of the living body from which the heartbeat signal has been acquired.

Claim 4 (Original): The system according to claim 3, wherein the waveform data specifying unit is configured to specify the average waveform data as being the reference waveform data, in cases where the similarity calculating unit determines that the similarity between the average waveform data and each set of the reference waveform data stored in the database is less than a predetermined value.

Claim 5 (Original): The system according to claim 1, wherein the electrocardiogram waveform data produced as the produced waveform data by the production unit and each set of electrocardiogram waveform data stored as the reference waveform data in the database include identification information distinguishable from the other electrocardiogram waveform data, respectively;

the system is configured to further comprises a setting unit configured to set identification information to the produced waveform data produced by the production unit;

the database is configured to store therein the reference waveform data so as to relate to identification information inherent to the living body; and

the search unit is configured to search the database based on the indentation information of the produced waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired.

Claim 6 (Previously Presented): The system according to claim 5, wherein the identification information includes at least one of a name showing the living body and a characteristic amount in each set of electrocardiogram waveform information;

the database is configured to store therein the reference waveform data made to relate to at least one of the name of the living body and the characteristic amount in the reference waveform data; and

the setting unit is configured to set, as the identification information, at least one of the name of the living body and the characteristic amount in the reference waveform data.

Claim 7 (Original): The system according to claim 1, wherein the calculation unit is configured to calculate a local maximum between every predetermined area and to calculate the heart rate based on the local maximum.

Claim 8 (Currently Amended): A method of measuring a heart rate, comprising:

a acquiring process of acquiring a heartbeat signal generated in a living body;

a producing process of producing electrocardiogram waveform data of the living body based on the acquired heartbeat signal;

a searching process of searching a database in which at least one set of electrocardiogram waveform data of a living body related to each person to be examined are stored in advance, the electrocardiogram waveform data serving as reference waveform data, on the basis of produced waveform data served by the produced electrocardiogram waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired;

a performing process of performing cross-correlation processing between the produced waveform data of which lower-frequency components have been removed and the specified reference waveform data; and

a calculating process of calculating an extremal value every period of time from data subjected to $R_{xy}$ in the cross-correlation processing and the heart rate based on the extremal value calculated every period of time,

wherein the cross-correlation processing unit calculates $R_{xy}$ defined by the equation (1) every time the delay time $\tau$ is shifted by a predetermined amount:

$$R_{xy}(t) = \lim_{T \to 0} \frac{1}{T} \int_{-\frac{T}{2}}^{\frac{T}{2}} x(t)y(t+\tau)dt \quad \ldots (1),$$

where x denotes the produced electrocardiogram waveform data of which lower-frequency components have been removed, y denotes the specified reference waveform data template data, $\tau$ denotes a delay time and provides a value of the $R_{xy}$ to the calculation unit.

Claim 9 (Original): The method according to claim 8, wherein the search process comprising:

a calculating process of calculating a similarity between the produced waveform data produced by the production unit and each set of the reference waveform data stored in the database; and

a specifying process of specifying, based on the calculated similarity, the reference waveform data of the living body from which the heartbeat signal has been acquired.

Claim 10 (Original): The method according to claim 8, wherein the electrocardiogram waveform data produced as the produced waveform data by the production process and each set of electrocardiogram waveform data stored as the reference waveform data in the database include identification information distinguishable from the other electrocardiogram waveform data, respectively;

the method further comprises the setting process of setting identification information to the produced waveform data produced by the production process; and

the searching process of searching the database in which the reference waveform data is stored so as to relate to identification information inherent to the living body, on the basis of the identification information of the produced waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired.

Claim 11 (Original): The method according to claim 10, wherein the identification information includes at least one of a name showing the living body and a characteristic amount in each set of electrocardiogram waveform information;

the setting process sets, as the identification information, at least one of the name of the living body and the characteristic amount in the reference waveform data; and

the searching process searches the database on the basis of the identification information of the produced waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired, the database storing therein the reference waveform data made to relate to at least one of the name of the living body and the characteristic amount in the reference waveform data.

Claim 12 (Currently Amended): An information recording medium in which a program for measuring a heart rate of a living body is recorded in a readable way by a computer included in a system for measuring a heart rate of the living body based on a heartbeat signal acquired from the living body, the measuring a heart rate program making the computer function as:

an acquiring device for acquiring a heartbeat signal generated in a living body;

a producing device for producing electrocardiogram waveform data of the living body based on the acquired heartbeat signal;

a searching device for searching a database in which at least one set of electrocardiogram waveform data of a living body related to each person to be examined are stored in advance, the electrocardiogram waveform data serving as reference waveform data, on the basis of produced waveform data served by the produced electrocardiogram waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired;

a performing device for performing cross-correlation processing between the produced waveform data of which lower-frequency components have been removed and the specified reference waveform data; and

a calculating device for calculating an extremal value every period of time from data subjected to $R_{xy}$ in the cross-correlation processing and the heart rate based on the extremal value calculated every period of time,

wherein the cross-correlation processing unit calculates $R_{xy}$ defined by the equation (1) every time the delay time $\tau$ is shifted by a predetermined amount:

$$R_{xy}(t) = \lim_{T \to 0} \frac{1}{T} \int_{-\frac{T}{2}}^{\frac{T}{2}} x(t)y(t+\tau)dt \quad \text{... (1),}$$

where x denotes the produced electrocardiogram waveform data of which lower-frequency components have been removed, $\gamma$ denotes the specified reference waveform data template data, $\tau$ denotes a delay time and provides a value of the $R_{xy}$ to the calculation unit.

Claim 13 (Previously Presented): The information recording medium according to claim 12, wherein when the computer is made to function as the searching device, the program makes the computer function as:

a similarity calculating device for calculating a similarity between the produced waveform data produced by the producing device and each set of the reference waveform data stored in the database; and

a waveform data specifying device for specifying, based on the calculated similarity, the reference waveform data of the living body from which the heartbeat signal has been acquired.

Claim 14 (Previously Presented): The information recording medium according to claim 12, wherein the electrocardiogram waveform data produced as the produced waveform data by the producing device and each set of electrocardiogram waveform data stored as the reference waveform data in the database include identification information distinguishable from the other electrocardiogram waveform data, respectively;

wherein the program makes the computer function as a setting device for setting identification information to the produced waveform data produced by the producing device; and

wherein the searching device searches the database in which the reference waveform data is stored so as to relate to identification information inherent to the living body, on the basis of

the identification information of the produced waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired.

Claim 15 (Previously Presented): The information recording medium according to claim 14, wherein the identification information includes at least one of a name showing the living body and a characteristic amount in each set of electrocardiogram waveform information;

wherein the program makes the computer function as:

a setting device for setting, as the identification information, at least one of the name of the living body and the characteristic amount in the reference waveform data; and

a searching device for searching the database on the basis of the identification information of the produced waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired, the database storing therein the reference waveform data made to relate to at least one of the name of the living body and the characteristic amount in the reference waveform data.

Claim 16 (Canceled).

Claim 17 (Currently Amended): A system for measuring a heart rate, comprising:

a database in which at least one set of electrocardiogram waveform data of a living body related to each person to be examined are stored in advance, the electrocardiogram waveform data serving as reference waveform data;

an acquisition unit for acquiring a heartbeat signal generated in the living body;

a production unit for producing electrocardiogram waveform data of the living body based on the acquired heartbeat signal;

a search unit for searching the database on the basis of produced waveform data served by the produced electrocardiogram waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired;

a cross-correlation processing unit for performing cross-correlation processing between the produced waveform data of which lower-frequency components have been removed and the specified reference waveform data;

a calculation unit for calculating an extremal value every period of time from data subjected to $R_{xy}$ in the cross-correlation processing and the heart rate based on the extremal value calculated every period of time; and

a control unit for calculating a standard deviation of the R-R intervals acquired in a heartbeat signal generated in the living body, and drawing a comparison between the standard deviation and a predetermined threshold,

wherein the cross-correlation processing unit calculates $R_{xy}$ defined by the equation (1) every time the delay time $\tau$ is shifted by a predetermined amount:

$$R_{xy}(t) = \lim_{T \to 0} \frac{1}{T} \int_{-\frac{T}{2}}^{\frac{T}{2}} x(t)y(t+\tau)dt \quad \ldots (1),$$

where x denotes the produced waveform data of which lower-frequency components have been removed, $\gamma$ denotes the specified reference waveform data, $\tau$ denotes a delay time and provides a value of the $R_{xy}$ to the calculation unit,

wherein if the calculated standard deviation is less than the threshold, the control unit concludes that there is no noise, thus operating to give the output of the acquired unit to the production unit, and

if the calculated standard deviation is above the threshold, the control unit issues an alarm or re-acquires another heartbeat signal.

Claim 18 (Canceled).

Claim 19 (Previously Presented): A system for measuring a heart rate, comprising:

a database in which at least one set of electrocardiogram waveform data of a living body related to each person to be examined are stored in advance, the electrocardiogram waveform data serving as reference waveform data;

an acquisition unit for acquiring a heartbeat signal generated in the living body;

a production unit for producing electrocardiogram waveform data of the living body based on the acquired heartbeat signal;

a search unit for searching the database on the basis of produced waveform data served by the produced electrocardiogram waveform data, to specify the reference waveform data of the living body from which the heartbeat signal has been acquired;

a cross-correlation processing unit for performing cross-correlation processing between the produced waveform data and the specified reference waveform data; and

a calculation unit for calculating an extremal value every period of time from data subjected to the cross-correlation processing and the heart rate based on the extremal value calculated every period of time,

wherein the cross-correlation processing unit calculates $R_{xy}$ defined by the equation (1) every time the delay time $\tau$ is shifted by a predetermined amount:

$$R_{xy}(t) = \lim_{T \to 0} \frac{1}{T} \int_{-\frac{T}{2}}^{\frac{T}{2}} x(t)y(t+\tau)dt \qquad \ldots (1),$$

where x denotes the electrocardiogram waveform data of which lower-frequency components have been removed, $\gamma$ denotes the template data, $\tau$ denotes a delay time and provides a value of the $R_{xy}$ to the calculation unit.